

OBITUARIES

D. K. C. MacDonald, a solid-state and low-temperature physicist with the National Research Council of Canada, died in Ottawa on July 28. He had been head of the low-temperature and solid-state physics section of the NRC's Division of Pure Physics.

Dr. MacDonald was born in Glasgow in 1920. He studied at the University of Edinburgh where he earned an MA degree in 1941 and a PhD in 1946. From 1946 to 1948 he was a Nuffield Research Fellow and later an I. C. I. Research Fellow at the Clarendon Laboratory. During this period he received two Oxonian degrees: the MA in 1948 and the D. Phil. in 1949. He came to Canada in 1951, when he was appointed to his position with the NRC.

Dr. MacDonald was honorary chairman of the Department of Physics in the Faculty of Pure and Applied Sciences of the University of Ottawa from 1955 to 1960 and was subsequently an honorary professor there. In 1960 he served as a NATO Visiting Professor in Physics at the University of Utrecht.

He was a fellow of the Royal Societies of London, Edinburgh, and Canada. A member of the American Physical Society and of the Canadian Association of Physicists, he was awarded the CAP's Gold Medal in 1960. He had served as a member of Commission I (Scientific Problems of Low Temperature Physics and Thermodynamics) of the Institut International du Froid and as a member of the editorial advisory boards of *Cryogenics* and of *The Physics and Chemistry of Solids*.

Will Victor Norris, professor emeritus of physics at Portland State College, Portland, Ore., died on July 16 in Tulsa, Okla., at the age of 69. A resident of La Jolla, Calif., since 1960, he had been visiting relatives in Tulsa.

Dr. Norris, who was known for his work in infrared and microwave spectroscopy, became, in 1955, the first chairman of Portland State's science division. He was also primarily responsible for the design of Portland State's present campus.

Born in Albion, Mich., he received an AB degree in 1918 from William Jewell College, Liberty, Mo., an MS degree in 1920 from Texas Christian University, and an EM degree in 1921 and an ScD degree in 1922 from the Colorado School of Mines.

He served as assistant professor of chemistry and physics at Texas Christian from 1919 to 1920 and then as associate professor of chemistry at Colorado School of Mines until 1926. From 1926 until 1929, he worked as a consulting engineer, after which he spent a year at the Montana School of Mines as associate professor of chemistry and physics.

In 1930, Dr. Norris joined the faculty of the University of Oregon as assistant professor of physics and became associate professor there the next year. In 1945, he became a full professor at the University. From

1953 until his retirement in 1960, he taught physics at Portland State College. Since 1960, he had been a lecturer at San Diego State College.

Dr. Norris was a member of the American Physical Society, the American Association of Physics Teachers, and the American Chemical Society.

Paul H. Keck, manager of laser programs for Texas Instruments, Inc., died in an automobile accident in Dallas on April 8.

Dr. Keck was born in Munich on June 28, 1908. He studied at the Munich Technische Hochschule, where he earned a PhD in physics in 1932. After a year as a fellow at the University of California, he returned to Germany to join the staff of the Zeiss Company. In 1948, he came again to the United States to work in the chemical-physics branch of the Signal Corps research and development laboratory. He became deputy chief of the chemical-physics branch in 1954. Three years later, he was appointed manager of the Solid State Laboratory of the General Telephone and Electronics Laboratories.

His main research activity was in optics and electronics; he developed zone-refining techniques and worked on semiconductors and luminescence. Dr. Keck was a member of the American Physical Society and of the Optical Society of America.

Sisir Kumar Mitra, professor emeritus of physics at the University of Calcutta, died in Calcutta on August 13. He was 71 years old.

Professor Mitra, who was born in Calcutta, was educated at Presidency College, Calcutta University, where he received an MSc degree in 1912 and a DSc in 1919. Later he studied at the University of Paris and earned a Parisian doctoral degree in 1923.

His teaching career began in 1913 with an appointment as professor of physics at Wesleyan College in Bankura, Bengal. He joined the faculty of the University of Calcutta as a lecturer in 1916. Seven years later, he was named Khaira Professor of Physics and retained that position until 1935 when he assumed the Rashbehary Ghose chair. He retired in 1955 but continued to maintain an office at the Institute of Radio Physics and Electronics in Calcutta.

Professor Mitra's main research interest was the physics of the upper atmosphere, to which he contributed numerous publications, including a book on the upper atmosphere and a monograph on active nitrogen. For many years an active participant in scientific agencies of the Indian Government, he was named National Research Professor of Physics in 1962. His other honors included membership in the Order of the British Empire (conferred in 1936), fellowship in the Royal Society of London (1958), and life membership in the Société Française de Physique.